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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,146	06/30/2003	Ulrich Muller	239796US0X	8172

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EXAMINER

LAWRENCE JR, FRANK M

ART UNIT<sup>1</sup> PAPER NUMBER

1724

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/608,146

Applicant(s)

MULLER ET AL.

Examiner

Frank M. Lawrence

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-18 and 20-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-18 and 20-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1 and 14-17 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 4-15 of U.S. Patent No. 6,929,679. Although the conflicting claims are not identical, they are not patentably distinct from each other because one having ordinary skill in the art would understand that the pressure vessel of the prior patent would be capable of operating at pressures of greater than 1 bar of 45 bar, and that such pressure conditions would be selected based on the nature of the application and desired storage amount.

3. Claims 1, 4-18 and 21-34 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 4-15 of U.S. Patent No. 6,929,679 in view of Klos et al. (6,432,176). The patented claims fully encompass and envision all of the limitations of the instant claims except that the container is non-cylindrical. Klos et al. ‘176

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disclose a pressure vessel for gas storage that can be cylindrical or non-cylindrical (col. 1, lines 5-12, col. 2, lines 39-49). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the container of the patented claims to include a non-cylindrical shape in order to provide a vessel that fits most efficiently in a given installation space.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1, 3-18 and 20-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of JP '572 or EP '608 in view of Klos et al. '176.

6. JP '572 discloses a gas storage system for an automobile, comprising a porous organo-metallic complex formed by mixing a bidentate organic ligand, such as 2,3-pyrazine carboxylic acid, with a metal ion such as copper in a solvent, resulting in a framework that can reversibly store methane, a known source of hydrogen. A device for storing the gas includes a container for holding the complex, an entrance/exit opening for allowing the gas to enter or exit the device, and a gas-tight maintaining mechanism capable of maintaining the gas under pressure as part of a fuel cell on board an automobile (abstract, machine translation paragraphs 9, 11, 13-15, 18, 20). It is submitted that the complex will inherently have a specific BET surface area of larger than 20 m<sup>2</sup>/g because it has the same structure and storage uses as those claimed and embodied in the instant invention. A storage pressure of about 30 bar is disclosed.

7. EP '608 discloses a gas storage system for an automobile, comprising a porous organo-metallic complex formed by mixing a biphenyl dicarboxylic acid with a metal ion such as copper in a solvent, resulting in a frame work having a BET surface area of 50-1000 m<sup>2</sup>/g (p. 3, lines 20-49, p. 4, lines 12-16, p. 10, lines 30-33, p. 11, lines 11-14). The complex is used to reversibly store methane, ethane, propane, butane, or nitrogen (p. 4, lines 21-24). A device for storing the gas includes a container for holding the complex, an entrance/exit opening for allowing the gas to enter or exit the device, and a gas-tight maintaining mechanism capable of maintaining the gas under pressure as part of a fuel cell on board an automobile (figures, abstract, p. 2, lines 30-35). A storage pressure of 36 bar is disclosed.

8. The instant claims differ from the disclosure of JP '572 and EP '608 in that the storage pressure is 40-70 bar and that the container is non-cylindrical. Klos et al. '176 disclose a pressure vessel for gas storage that can be cylindrical or non-cylindrical (col. 1, lines 5-12, col. 2, lines 39-49). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the container of the patented claims to include a non-cylindrical shape in order to provide a vessel that fits most efficiently in a given installation space. Absent a proper showing of criticality or unexpected results, the storage pressure is considered to be a parameter that would have been routinely optimized by one having ordinary skill in the art, who would understand that the pressure vessel of the prior references would be capable of operating at pressures of greater than 40 bar, and that such pressure conditions would be selected based on the nature of the application and desired storage amount. Further, figure 18 of EP '608 suggests that the storage of methane on the complex increases with an increase of pressure up to and

apparently beyond 35 bar. One skilled in the art would understand that there is an economic balance to be achieved between storage pressure and the storage capacity at the given pressure.

### ***Response to Arguments***

9. Applicant's arguments filed September 5, 2006 have been fully considered but they are not persuasive. Applicant argues that none of the cited prior art discloses the operating pressure of 40-70 bar. The examiner agrees and the prior art rejections have been changed to address the amendment. It is the examiner's opinion that the claims are obvious over the JP '572 and EP '608 references because the disclosed pressures of 30 and 35 bar are near enough to the claimed range of 40-70 bar that one having ordinary skill in the art would be motivated to use the prior containers at slightly higher pressures if it is economically feasible. The prior art rejections over the Muller et al. '679 and DE '139 references have been withdrawn because the disclosed operating pressure of 0.15 bar is nowhere near the claimed range. The double patenting rejections are maintained because it would have been obvious to one having skill in the art to modify the patented containers to operate in the instantly claimed pressure range.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Frank M. Lawrence  
Primary Examiner  
Art Unit 1724

*Frank Lawrence*  
10-4-06

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